

look for some deeper meaning, such as that for which Dr. Frazer argued a year or two ago in the *Independent Review*.

In the visual section is included also a discussion of the dance, commonly unisexual in the lower stages of culture, and of phallic emblems and amulets. Under the heading of hearing we have a discussion of the rôle of music in sexual life, while the next chapter, *mirabile dictu*, is devoted to a classification of "gentlemen's stories" and allied themes.

In dealing with the sexual importance of the sense of smell Dr. Stoll gives an interesting discussion on the classification of odours, and has also a good deal to say on the subject of racial factor. The last chapter deals with the sense of touch; it includes a discussion of kissing, of specific sexual acts, and of inversion and perversion. It is clear that a work of this sort, if it is to be in any sense complete, demands encyclopædic knowledge, and can only be successfully carried through with the aid of numerous monographs on the various questions. In recent years a number of general works on the sexual life of primitive peoples have appeared, together with a certain number of monographs on special points such as inversion in Eastern Asia. Until the number of the latter has considerably increased it will hardly be possible to produce anything more than a sketch of the subject with which Dr. Stoll has dealt; he would probably be the first to recognise the fact. He is, however, as he informs us in the preface, chiefly concerned to classify from the point of view of psychology; and as a classification of anthropological facts Dr. Stoll's work is as useful as it must have been laborious.

That these two works should both have been produced in Germany is no accident. The Teutonic spirit aims at an all-embracing philosophy, whether the subject be metaphysical or something less abstruse. It is perhaps fortunate that both in England and France the feeling in anthropological circles is in favour of knowing all about something rather than a little about everything. Classification of knowledge may be the ultimate goal; at the present day we have still to lay the foundations of such a classification.

N. W. T.

THE BONE MARROW.

The Bone Marrow: a Cytological Study. By W. E. Carnegie Dickson. With 49 photomicrographs and 12 coloured plates by Richard Muir. Pp. xii+160. (London: Longmans, Green and Co., 1908.) Price 2l. 2s. net.

THE first part of the book contains a brief description of the histological methods employed, followed by a description of the various types of marrow and of the changes it undergoes in disease.

The second part deals with the cytology of the marrow, which the author has studied with the object of observing pathological changes in the cells. The reviewer is inclined to think that in the present state of our knowledge this attempt is premature. The changes illustrated on plate iii., Figs. 1-5, may be degenerative, but some of the nuclei in these cells have a remarkable resemblance to those figured by

L. H. Huic in her papers on *Drosera* (*Q.J.M.S.*, vols. xxxix. and xlii., n.s.), where the cells were subjected to purely physiological stimuli. So also the type of eosinophil cell on plate iii., Fig. 1, No. 14, and Fig. 3, No. 23, is frequently met with in the tissues. Its nucleus somewhat resembles that of an exhausted nerve cell (Mann, *J. of Anat. and Physiol.*, vol. xxix., 1894), and is quite possibly a physiological appearance. Much more work on the lines of these three most important papers must be done before we can safely begin the study of intracellular pathology.

On p. 36 the author explains shortly the opinions of Dominici and Pappenheim on the parent cell of the neutrophil myelocyte, a cell called by the former non-granular basophil myelocyte, and by the latter identified with Ehrlich's large lymphocyte. He illustrates his idea of this cell in plate i., Figs. 10, 11, 12. The cells in each of these figures are quite different from those pictured by Dominici, Pappenheim and Ehrlich in the works cited in the bibliography. They are typical large mononuclears (Ehrlich's). It is a curious fact, but neither in the coloured plates nor the schemes on plate xii. is there a single example of an undoubted large lymphocyte, one of the most characteristic cells of the marrow, and common to it and the other blood-forming organs.

On the same page he says of this cell:—

"According to my own observations this staining reaction" (of the cytoplasm) "varies within somewhat wide limits, all gradations from a definite blue to a pale pink being obtainable with methylene blue and eosin."

This passage indicates that the technique used by the author is quite unsatisfactory. Every histologist knows that most things, especially the cytoplasm, can be stained with eosin. On the other hand, the cytoplasm of these cells (large lymphocytes, lymphocytes, large mononuclears) has a marked affinity for basic dyes, as can be seen in preparations stained with Pappenheim's pyronin methyl green mixture, or with toluidin blue or polychrome methylene blue, and differentiated with weak acetic acid. Ehrlich pointed out many years ago that successive methods, such as hæmatoxylin and eosin, or eosin and methylene blue, which the author has worked with, are quite inadequate for the study of the blood. The reviewer finds that in order to demonstrate neutrophil granules regularly in sections and wet fixed films, the acid and basic dyes must be used simultaneously, and their proportions so adjusted that the granules are stained with the acid dye while the cytoplasm of the adult leucocyte and myelocytes is unstained, and that of the promyelocytes and large and small lymphocytes is stained with the basic dye.

Judged by this standard, many of the figures in the coloured plates, although very beautiful, are worthless for the object in view. Thus, in plate i., Fig. 13, there are lymphocytes with eosin-stained cytoplasm. In plate iii., Figs. 1 and 2, the nuclear chromatin is blue to violet, all else pink. The majority of the cells in plate iii., Fig. 4, and the large cells with basophil cytoplasm in plate vii., Fig. 10, are labelled myelocytes, but their granules are not shown, and therefore it is not proved that they are myelocytes.

The introduction of the term premyelocyte (p. 49) for the non-granular cell with basophil cytoplasm which gives rise to the myelocytes is most regrettable, first because too many names have been given to this cell already, and secondly, because the very similar word promyelocyte has already been in use for some time to describe cells like those in plate i., Fig. 8, Nos. 3, 4, 5, *i.e.* early myelocytes with granules in a still basophil cytoplasm (Pappenheim). Likewise the term intermediate myelocyte is both clumsy and unnecessary when the word metamyelocyte is already well established (Pappenheim).

From what the author says on pp. 40, 48, 62, and his figure on plate xii., it is obvious that he confuses the Reizungsformen with the large mononuclears. They are absolutely distinct cells, only differing from the young megaloblast in that the narrow rim of cytoplasm is extremely basophil and free from hæmoglobin.

The most valuable thing in this book is the series of plates illustrating the author's macroscopic bone-marrow preparations. These are jewels of a pathological museum. Taken as a whole, the book contains very little that is new, and is not a serious contribution to science.

PROGRESS OF CLIMATOLOGY.

Handbuch der Klimatologie. By Dr. Julius Hann. Band i., Allgemeine Klimalehre. Dritte wesentlich umgearbeitete und vermehrte Auflage. Pp. xiv+394. (Stuttgart: J. Engelhorn, Bibliothek geographischer Handbücher, 1908.)

A NEW edition of Prof. Hann's well-known handbook of climatology will be greeted with pleasure by geographers and meteorologists alike. The second edition has been rendered accessible to English readers by Prof. De Courcy Ward's translation. The present edition has been largely extended and revised, and much recent work has been incorporated in it. The numerous references to original papers, a feature which the book shares with its fellow, the "*Lehrbuch der Meteorologie*," are specially welcome. They render the work no mere text-book, but a veritable encyclopædia to which the student will turn as a matter of course to ascertain what has been accomplished by others in the field in which he proposes to work.

In external features the book has gained considerably from an increase in the size of the page which makes it possible to set out tabular matter in more comprehensive style. The more detailed subdivision of the material into books, chapters and sections is also of great assistance to the reader.

A comparison of the two editions is of the nature of a survey of the progress of climatology in the past decade. Perhaps the most striking development lies in the greater prominence given to the question of radiation, which finds expression in an introductory section on solar radiation and in a considerable extension of the chapter on the solar or mathematical climate. Langley's work on the distribution of energy in the solar spectrum and the researches on the determination of the amount of radiation received from the sun,

which are associated with the name of Angström, are dealt with, and open what is practically a new chapter in the science of climatology. The question of cyclical changes of climate has also come to the forefront in recent years, and the chapter thereon, with its numerous references, forms a useful summary of the present state of our knowledge of this question and of the allied one of the dependence of variations of terrestrial climate on solar phenomena. In this connection a bibliography of series of observations extending over long periods, many of them to the second half of the eighteenth century, is of great value. Prof. Hann endorses the generally accepted view that all available meteorological records show no permanent change of climate. On the wider question of a change of climate within historic times he preserves an open mind, and considers the usual statement that our climate is not changing to be a no more justifiable deduction from known facts than the reverse opinion.

Increased space is devoted to the consideration of methods of computing averages for temperature and rainfall from incomplete or short series of observations which shall be comparable with those deduced from long periods, a question which is of great importance in forming an estimate of the climatic factors of regions which have only recently been opened to civilisation. Finally, we mention an entirely new chapter on the great climatic zones of the globe, which gives a concise summary of the main features of the climate of each of the regions into which the earth's surface may be divided. We look forward with interest to the appearance of the second and third volumes of the book, which are to deal with the climates of special regions in greater detail.

R. G. K. L.

SOME NEW TEXT-BOOKS OF INORGANIC CHEMISTRY.

- (1) *Cours de Chimie inorganique.* By F. Swarts. Pp. iv+706. (Paris: Librairie scientifique A. Hermann, 1908.) Price 15 francs.
- (2) *A Text-book of Inorganic Chemistry.* By A. F. Holleman. Issued in English in cooperation with H. C. Cooper. Pp. viii+502. Third English edition, partly re-written. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd., 1908.)
- (3) *General Chemistry for Schools and Colleges.* By Dr. Alexander Smith. Pp. xiii+529. (London: G. Bell and Sons, 1908.) Price 6s. 6d. net.
- (4) *The New Matriculation Chemistry, specially adapted to the London University Matriculation Syllabus.* By Dr. G. H. Bailey. Pp. viii+528. Sixth impression, fourth edition; revised by H. W. Bausor. (Cambridge: University Tutorial Press, Ltd., 1908.) Price 5s. 6d.

(1) THE "*Cours de Chimie*," so the author states in the preface, is a reproduction of his course on general chemistry. Theoretical questions are discussed as they happen to occur, and, it may be added, these theoretical questions are treated in a manner which few first-year students of an English University would grasp. It speaks well for the previous training in mathematics and physics of the Belgian schoolboy that on